SONY

Digital Betacam Family 2004

Digital BETACAM

More flexibility and greater creativity– whether in shooting or post-production.

You make it a Sony

A Worldwide Standard **for Digital Programme Production.**

Digital Betacam was the first recording format to bring the benefits of digital production to the wider programme making community. Since its introduction, Digital Betacam has become the established favourite for standard definition programme production where only the ultimate picture quality and sound will suffice.

The high quality performance of Digital Betacam, combined with its simplicity of operation is just one reason why many broadcasters around the world have chosen Digital Betacam as their "in-house" production format. Recognising the increased use of Digital Betacam around the world, four new Digital Betacam models have been added to bring some powerful new features to the Digital Betacam line-up.

With a comprehensive line-up of models and built-in capability to replay Betacam, Betacam SP, Betacam SX and MPEG IMX cassettes, Digital Betacam is the ideal format to fully integrate your existing operations into a digital environment.

Digital BETACAM

PRODUCT LINE-UP

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Camcorders

DVW-790WSP
DVW-709WSP
DVW-707P

The DVW-790WSP, DVW-709WSP and DVW-707P camcorders are the result of working closely over the years with world-leading cinematographers and programme producers. Employing Power HAD CCDs, they allow total freedom of picture content and enable shooting in low lighting conditions. Menu-driven set up allows camera operators to customise camera settings so that they precisely suit production requirements – from ENG to Digital Cinematography.

COMMON FEATURES

- 3-chip 2/3-inch CCD
- Stunning colour accuracy
- Power HAD sensors reduce vertical smear
- High sensitivity and outstanding signal to noise ratio
- Stylish and ergonomic design
- 12-bit Advanced Digital Signal Processing (ADSP)
- TruEye™ processing reproduces far more natural colour than conventional analogue camcorders
- Optional SDI output board
- Optional picture cache memory board provides up to 8 seconds of loop recording
- Turbo gain up to 48 db
- Auto Trace White (ATW) system
- Dial in colour temperature
- Built-in film gamma curve
- Multi matrix feature
- Cameraman-programmable menu system
- SDI output option

DVW-790WSP

- 16:9/4:3 switchable FIT CCD
- Smear level of –140 dB
- Sensitivity of F9.0 at 2000 lux
- Two optical filter wheels
- 2.0-inch viewfinder

DVW-709WSP

- 16:9/4:3 switchable IT CCD
- Smear level of –120 dB
- Sensitivity of F9.0 at 2000 lux
- Two optical filter wheels
- 2.0-inch viewfinder

DVW-707P

- 4:3 IT CCD
- Smear level of –125 dB
- Sensitivity of F10.0 at 2000 lux
- One optical filter wheel
- 1.5-inch viewfinder

Optional Accessories

CA-701
Camcorder Adapter

CA-755P
Camcorder Adapter

A-8314-798-A
Viewfinder Eye-piece
(High performance, x3)

A-8262-537-A
Viewfinder Eye-piece
(High magnification)

A-8262-538-A
Viewfinder Eye-piece
(Low magnification)

A-8267-737-A
Viewfinder Eye-piece
(Standard magnification with special compensation for aberrations)

BSC-1 Pack
Setup Card

AC-DN1
AC Adapter

AC-DN2B
AC Adapter

BP-GL95
Lithium-ion Battery

BC-M150
Battery Charger

BC-M50CE
Battery Charger

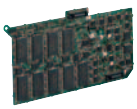
BKDW-701
Servo Filter Unit

BKW-401
Viewfinder Rotation Bracket

VCT-14
Tripod Adapter

CCU-550DP
Camera Control Unit
(For CA-755P)

BVF-55CE
5-inch B/W Viewfinder
(For CA-701/702P/755P)



BKDW-703
Picture Cache Option

BKDW-702
SDI Output Option

RM-B750
Remote Control Unit

RM-B150
Remote Control Unit

WRR-862B
Wireless Receiver

WRR-855B
Wireless Receiver
(Shown here with a BTA-801 Camera adapter for rear mounting to camcorder)

WRT-8B + ECM-88BC
Wireless Transmitter & Lavalier Mic

WLL-CA50
MPEG Wireless Adapter

WLL-RX55
Wireless Receiver

BP-GL95 Lead-free solder is used for soldering. Halogenated flame retardants are not used in the cabinets and the printed wiring boards.

Studio Recorders

DVW-M2000P

Records: Digital BETACAM

Replays: BETACAM SX, MPEG IMX, Digital BETACAM, BETACAM, BETACAM SP

DVW-2000P

Records: Digital BETACAM

Replays: Digital BETACAM

The DVW-M2000P is a Digital Betacam editing VTR with Betacam, Betacam SP, Betacam SX and MPEG IMX playback. It replaces the DVW-A500P, and combines superb picture quality with excellent multi-generation editing capability. The DVW-M2000P records 4 channels of digital audio at 20-bit resolution and has powerful editing features such as Pre-read, Dynamic Tracking (DT) and insert/assemble editing to zero frame accuracy. Recording and playback of UMID (Unique Material Identifier) is also a standard feature, for productions where the rapid identification and access to material is required. Many broadcasters use Digital Betacam VTRs today for playout of content from Flexicart and Library Management (LMS) systems. The DVW-M2000P is ideal for this application, where the requirement for rugged, reliable 24 hour-per-day operation is mandatory.

The DVW-2000P offers the same features as the DVW-M2000P but without Betacam, Betacam SP, Betacam SX and MPEG IMX playback.

FEATURES

DVW-M2000P

- 4:2:2 component digital VTR
- 625/50 operation
- Digital Betacam recording and playback
- Playback of Betacam, Betacam SP, Betacam SX and MPEG IMX cassettes
- 4 channels of 20-bit 48 kHz digital audio
- Superb multi-generation editing capability
- ±0 frame accurate assemble and insert editing
- Pre-read editing capability
- Broadcast quality variable speed playback from -1 to +3 times (-1 to +2 times with Betacam SX)
- Long record and playback time: 124 minutes using an L cassette and 40 minutes using an S cassette
- Composite and component analogue and SDI inputs and outputs as standard
- 4 analogue and AES/EBU audio inputs and outputs
- UMID reader/writer as standard
- Memory Stick slot for storing operational set up menus

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- 4:2:2 component digital VTR
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- Long record and playback time: 124 minutes using an L cassette and 40 minutes using an S cassette
- Composite and component analogue and SDI inputs and outputs as standard
- 4 analogue and AES/EBU audio inputs and outputs
- UMID reader/writer as standard
- Memory Stick slot for storing operational set up menus

DVW-M2000 + DVW-2000

525/60 Digital Betacam recorders are also available with CE marking for the Europe, Africa and Middle East market.

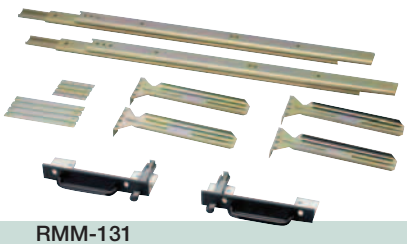
Please contact your Sony Sales Centre for details.

Optional Accessories

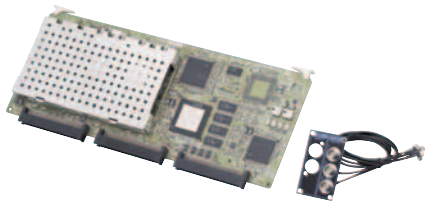
BKDW-101
Control Panel
The BKDW-101 provides additional control of the DVW-M2000P and DVW-2000P from a remote location. It is used with the BKMW-102 Control Panel Case and the BKMW-103 Control Panel Extension Kit. A switch on the front of the recorder allows control to be selected between the remote control panel and the control panel supplied with the recorder. The BKMW-102 and BKMW-103 can also be used to extend the supplied front panel of the recorder. BKMW-103 includes a blanking panel which can be fixed to the front of the recorder in place of the original control panel.

BKMW-102
Control Panel Case

BKMW-103
Control Panel
Extension Kit
(Cable length: 10 m)



RMM-131
Rack Mount Kit



BKMW-104
HD Up-Converter Board
For installation into DVW-M2000P and DVW-2000P Digital Betacam VTRs. Converts 625/50 Betacam, Betacam SP, Betacam SX, MPEG IMX and Digital Betacam material to High Definition 1080/50i, and outputs from the DVW-M2000P via HD-SDI. Converts 625/50 Digital Betacam material to High Definition 1080/50i, and outputs from the DVW-2000P via HD-SDI.

Tapes

BCT-D34L/D64L/D94L/D124L
Digital Video Cassettes (Large Cassette)

BCT-D6/D12/D22/D32/D40
Digital Video Cassettes (Small Cassette)

BCT-D12L/BCT-5CLN
Cleaning Cassette

Portable VTR & Compact Players

The **DVW-250P** is a portable Digital Betacam recorder designed specifically for outside production. The DVW-250P records Digital Betacam video and 4 channels of 20-bit digital audio onto both S and L cassettes, for up to 124 minutes of continuous recording. Full colour video and audio REC confidence playback is provided to enable material to be monitored during recording. The DVW-250P combines rugged, reliable operation with lightweight construction and can be operated using battery power for operation in the remotest of locations.

The **J-30** and **J-30/SDI** are the smallest players of Betacam family cassettes. The design concept of the J-Series was for affordable, compact office viewers to be used by producers, journalists and production staff. The J-30 and J-30/SDI can replay Betacam, Betacam SP, Betacam SX, MPEG IMX and Digital Betacam S-cassettes and L-cassettes. They also have all the features required for viewing and logging, and – although not designed for linear editing applications or on-air use – are ideal for source feeding to servers or non-linear editing systems. The J-30 provides composite and component analogue video outputs, while the J-30/SDI has composite analogue and SDI outputs. Both models have an i.LINK interface for feeding material to DV-based editing applications, and are supplied with an infra-red remote controller. The J-30 and J-30/SDI also have a jog/shuttle dial, 525/625 versatility, simple remote control via RS-422A and audio meters – all packed into their compact size.

DVW-250P

J-30
J-30/SDI

Digital BETACAM
MPEG IMX
BETACAM SX
BETACAM SP
BETACAM

FEATURES

DVW-250P

- 4:2:2 component digital portable recorder
- 625/50 operation
- 4 channels of 20-bit 48 kHz digital audio
- Accepts both S and L cassettes
- Compact and lightweight at approx. 7.7 kg, including battery and S cassette
- 26 W power consumption in REC mode, with CONFI off
- Automatic switching between external and internal batteries
- Full colour video and audio confidence playback
- LCD panel for audio and video level metering, channel condition and menu settings
- Accurate back space editing
- 9-pin remote control from an optional BVR-3 remote controller
- Colour freeze frame capability
- SDI input and output
- 26-pin camera interface for both analogue and digital signals
- Analogue composite input and output
- Analogue audio inputs and outputs

Accessories

- **BVR-3** Remote control unit
- **CCZ-A Series** 26-pin cables

J-30 & J-30/SDI

- Extremely compact: 307 x 100 x 397 mm (12 ⅛ x 4 x 15 ½ inches) in size and just 8 kg in weight
- i.LINK interface (25 Mb/s DV output, and remote control input via 6-pin IEEE-1394)
- Playback of Betacam, Betacam SP, Betacam SX, MPEG IMX and Digital Betacam cassettes
- Playback of S-cassettes and L-cassettes
- Jog/Shuttle dial with x20 maximum search speed for Digital Betacam cassettes
- Infra-red remote controller
- 525/625 switchable for international operation
- Monitor output of 2 audio channels (selectable on front panel)
- Audio meters for display of the selected 2 channels of audio
- Industry-standard RS-422A control interface for remote feeding into servers and non-linear editors

J-30 only

- Composite analogue and component analogue video outputs

J-30/SDI only

- Composite analogue and 2 SDI outputs (one with superimposed characters)
- Timecode output via BNC connector
- Built-in UMID (Unique Material Identifier) reader
- 4 channels of digital output via SDI (8 channels when replaying MPEG IMX cassettes)

Specifications

Camcorders

	DVW-707P	DVW-709WSP		DVW-790WSP	
		16:9 MODE	4:3 MODE	16:9 MODE	4:3 MODE

GENERAL

Mass	Approx. 5 kg (11 lb. 1 oz)		
Operating weight	Approx. 7 kg (15 lb. 7 oz)		
Power requirements	DC 12 V +5.0 V / -1.0 V		
Power consumption	29 W	31.5 W	32 W
Operating temperature	0 °C to +40 °C (+32 °F to +104 °F)		
Storage temperature	-20 °C to +60 °C (-4 °F to + 140 °F)		
Humidity	25 % to 85 % (relative humidity)		
Continuous operating time	Approx.170 min. (With BP-GL95)*	Approx.165 min. (With BP-GL95)*	Approx.160 min. (With BP-GL95)*

SIGNAL INPUTS

Genlock video	BNC type (x1), 1.0 Vp-p, 75 Ω
Time code input	BNC type (x1), 0.5 to 18 Vp-p, 10 kΩ
Audio (CH-1/2)	XLR-3-31 type (x2), -60 dBm / +4 dBm selectable, high impedance, balanced
Mic input	XLR-3-31 type (x2), -60 dBm / +4 dBm selectable, high impedance, balanced

SIGNAL OUTPUTS

Video output	BNC type (x1), 1.0 Vp-p, 75 Ω
Video test output	BNC type (x1), 1.0 Vp-p, 75 Ω
Time code output	BNC type (x1), 1.0 Vp-p, 75 Ω
Earphone	Minijack
Audio output (CH-1/2)	XLR-5-pin male (stereo)

OTHERS

Lens	12-pin
Remote	8-pin
Light	2-pin, DC 12 V, max. 50 W
DC input	XLR-4-pin (for the optional AC-550CE)
DC output	4-pin (for wireless microphone receiver), DC 12 V
Camcorder adapter	40-pin

VTR SECTION

GENERAL

Recording format	Digital Betacam
Tape speed	96.7 mm/s
Playback/Recording time	Max. 40 min. with BCT-D40 cassette
Fast forward time	Less than 6 min. with BCT-D40 cassette
Rewind time	Less than 5 min. with BCT-D40 cassette
Recommended tape	Sony Digital Betacam S cassette, BCT-D6/D12/D22/D32/D40 Series
Sampling frequency	Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz
Quantization	10-bit / sample
Error correction	Reed-Solomon code
Error concealment	Adaptive three dimensional

DIGITAL VIDEO PERFORMANCE

Band width	Y: 5.75 MHz ±0.5 dB, R-Y/B-Y: 2.75 MHz ±0.5 dB
S/N ratio	More than 62 dB
K-factor (2T pulse)	Less than 1 %
Linearity	Less than 2 %
Y/R-Y/B-Y delay	Less than 15 ns

DIGITAL AUDIO PERFORMANCE

Sampling frequency	48 kHz (synchronised with video)
Quantization	20-bit / sample
A/D and D/A quantization	16-bit / sample
Frequency response	20 Hz to 20 kHz, +0.5 dB/-0.8 dB
Dynamic range	More than 85 dB (emphasis ON)
Distortion (at 1 kHz, emphasis ON, reference level)	Less than 0.08 %
Cross talk (at 1 kHz, reference level)	Less than –70 dB
Wow & flutter	Below measurable limit
Head room	20 dB (ex-factory setting)
Emphasis (ON/OFF selectable)	T1 = 50 µs, T2 = 15 µs

	DVW-707P	DVW-709WSP		DVW-790WSP	
		16:9 MODE	4:3 MODE	16:9 MODE	4:3 MODE

ANALOGUE AUDIO PERFORMANCE (CUE TRACK)

Frequency response	100 Hz to 12 kHz, ±3 dB
S/N ratio	More than 50 dB, at 3 % distortion level
Distortion	Less than 1.5 % (T.H.D at 1 kHz, reference level)
Wow & flutter	Less than 0.2 %

CAMERA SECTION

CAMERA

Pickup device	3-chip 2/3-inch Power HAD IT CCD	3-chip 2/3-inch 16:9/4:3 Widescreen Power HAD IT CCD		3-chip 2/3-inch 16:9/4:3 Widescreen Power HAD FIT CCD	
Picture elements	795 (H) x 596 (V)	1038 (H) x 594 (V)		1038 (H) x 594 (V)	
Optical system	F 1.4 prism system				
Built-in filters	1: Clear, 2: 5600 K +1/8 ND, 3: 5600K, 4: 5600 K+1/64 ND	1: Clear, 2: 1/4 ND, 3: 1/16 ND, 4: 1/64 ND, A: Cross, B: 3200 K, C: 4300 K, D: 6300 K			
Shutter speed	1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 (s)				
Lens mount	Special bayonet mount				
Sensitivity (2000 lx, 89.9 % reflectance)	F10.0 (Typical) Equivalent to ISO 600 or more	F9.0 (Typical) Equivalent to ISO 500 or more			
Minimum illumination	Approx. 0.15 lx (F1.4 lens, +48 dB Turbo Gain)	Approx. 0.2 lx (F1.4 lens, +48 dB Turbo Gain)			
Smear level	-125 dB	-120 dB		-140 dB	
S/N ratio	63 dB (typical)				
Vertical resolution	(Without EVS) 400 TV lines, (With EVS) 450 TV lines			(Without Super EVS) 400 TV lines, (With Super EVS) 450 TV lines	
Registration	0.05 % (All zones, without lens)				
Geometric distortion	Below measurable level (Without lens)				
Warm-up time	2 sec.				
Modulation depth at 5 MHz	More than 55%	More than 65%	More than 55%	More than 65%	More than 55%

VIEWFINDER

CRT	1.5-inch monochrome	2.0-inch monochrome	2.0-inch monochrome
Controls	BRIGHT control, CONTRAST control, PEAKING control, TALLY, ZEBRA, DISPLAY switches		
Horizontal resolution	600 TV lines	450 TV lines (16:9)	450 TV lines (16:9)
Microphone	Ultra-directional (Detachable)		

SUPPLIED ACCESSORIES

Maintenance Manual (x1), Operation Manual (x1), Lens cap (x1), Shoulder belt (x1),Microphone (x1), XLR cap (x4).

* The battery remaining indicator on the camcorder LCD may not be accurate. The battery alarm may not function properly. Please contact your local Sony office or authorized dealer for changing the battery alarm setting.

Specifications

Studio Recorders

	DVW-M2000P	DVW-2000P
GENERAL		
Power requirements	AC 100 V to 240 V, 50/60 Hz	
Power consumption	220 W	200 W
Operating temperature	+5 °C to +40 °C (+41 °F to +104 °F)	
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)	
Humidity	20 % to 90 % (relative humidity)	
Mass	23.5 kg (52 lb 11 oz)	
Dimensions (W x H x D)	427 x 174 x 544 mm (16 7/8 x 6 7/8 x 21 1/2 inches)	
Tape speed	Digital BETACAM: 96.7 mm/s	
	MPEG IMX: 53.776 mm/s	—
	BETACAM SX: 59.575 mm/s	—
	BETACAM/BETACAM SP: 101.51 mm/s	—
Playback time	Max. 124 min with BCT-D124L cassette	
Fast forward/rewind time	Approx. 3 min with BCT-D124L cassette	
Search speed range	Digital BETACAM: ±50 times normal playback speed	
	MPEG IMX: ±78 times normal playback speed	—
	BETACAM SX: ±78 times normal playback speed	—
	BETACAM/BETACAM SP: ±42 times normal playback speed	—
Servo lock time	0.7 s or less (from standby on)	
Load/unload time	6 s or less	

	DVW-M2000P	DVW-2000P
INPUT/OUTPUT SIGNALS		
Analogue composite input	BNC (x2, including one loop through output), 1.0 Vp-p, 75 Ω, sync negative	
Analogue composite output	BNC (x3, including one character out), 1.0 Vp-p, 75 Ω, sync negative	
Analogue component input	BNC (x3, for 1 set, Y/R-Y/B-Y),Y: 1.0 Vp-p, 75 Ω, sync negative, R-Y/B-Y: 0.7 Vp-p, 75 Ω	
Analogue component output	BNC (x3, for 1 set, Y/R-Y/B-Y),Y: 1.0 Vp-p, 75 Ω, sync negative, R-Y/B-Y: 0.7 Vp-p, 75 Ω	
SDI input	BNC (x2, including one active throughout), SMPTE 259M (ITU-R BT.656-3), 270 Mb/s	
SDI output	BNC (x3, including one character out), SMPTE 259M (ITU-R BT.656-3), 270 Mb/s	

Recommended Wireless Systems for Camcorders

	WRR-862B Receiver	WRR-855B Receiver	WRT-8B Transmitter*	ECM-88BC Lavalier Mic
UHF operating frequency	Dependent on version / region	Dependent on version / region	Dependent on version / region	no
Frequency response	40 Hz – 18 kHz	100 Hz – 15 kHz	40 Hz – 20 kHz	40 Hz – 20 kHz
Signal to noise	>60 dB A-weighted	>60 dB A-weighted	60 dB or more	
RF Power output	N/A		10/50 mW Switchable	
Current consumption	230 mA	200 mA	6 hours @ 50 mW	
Battery life	5 hours		13 hours @ 10 mW	
Max SPL	N/A			120 dB
Weight	400 g	280 g	140 g incl batteries	1.5 g Capsule
Dimensions W x H x D (mm)	89 x 120 x 29.5	88 x 118 x 31	63 x 83 x 17	3.5 x 3.5 x 12.5 Capsule
Mounting/adaptor brackets required	A8278-057A	CA-WR855, BTA-801 or A8278-057A		
Cable Length	N/A			2.5 m

* Or use WRT-847B Handheld Transmitter with either CU-F780, CU-G780, CU-E700, CU-E672 or CU-F117 Capsule

	DVW-M2000P	DVW-2000P
HD-SDI output (option)	BNC (x3)	
Analogue audio input	XLR (x4) (4CH)	
Analogue audio output	XLR (x4) (4CH)	
Cue audio input	XLR (x1)	
Cue audio output	XLR (x1, only Digital Betacam playback)	
Digital audio input	BNC (x2), 4 channels, AES/EBU, default 48 kHz (32 to 48 kHz with Sample Rate converter), Complies with AES-3id-1995	
Digital audio output	BNC (x4), 8 channels, AES/EBU, 48 kHz fixed, Complies with AES-3id-1995	BNC (x2), 4 channels, AES/EBU, 48 kHz fixed, Complies with AES-3id-1995
Remote control — Remote (RS-422A)	D-sub 9-pin (x2), Sony 9-pin remote interface	
Remote control — RS-232C (ISR*)	D-sub 9-pin (x1), RS-232C interface	
Remote control — Parallel Remote	D-sub 50-pin (x1)	
Remote control — Video control	D-sub 15-pin (x1)	
Remote control — Control Panel	Circular connector 10-pin	
Time code input	XLR (x1)	
Time code output	XLR (x1)	
Memory card insertion slot	"Memory Stick" slot (x1)	
Monitor output L/R	XLR (x2) (channel selectable)	
Phones	JM-60 Stereo phone jack	

	DVW-M2000P	DVW-2000P
PROCESSOR ADJUSTMENT RANGE		
Video level	±3 dB/ -∞to 3 dB selectable	
Chroma level	±3 dB/ -∞to 3 dB selectable	
Black level	±210 mV	
Chroma phase	±30°	
System sync phase	±15 µs	
System SC phase	±200 ns	
Y/C delay	±100 ns (BETACAM/BETACAM SP playback only)	—
Composite input level	±3 dB	

	DVW-M2000P	DVW-2000P
DIGITAL VIDEO PERFORMANCE		
Sampling frequency	Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz	
Quantization	Digital BETACAM: 10-bit / sample	Digital BETACAM: 10-bit / sample
Error correction	Reed-Solomon code	
Digital input to analogue component output	D/A quantization: 10-bit / sample Bandwidth: Y: 0 to 5.75 MHz +0.5/-2.0 dB, R-Y/B-Y: 0 to 2.75 MHz +0.5/-2.0 dB S/N ratio: 62 dB or more, K-factor (2T pulse): 1% or less	
Analogue component input to analogue component output	A/D and D/A quantization: 10-bit / sample Bandwidth: Y: 0 to 5.75 MHz +0.5/-2.0 dB, R-Y/B-Y: 0 to 2.75 MHz +0.5/-2.0 dB S/N ratio: 56 dB or more, K-factor (2T pulse): 1% or less, LF non-linearity: 3% or less	
Analogue composite input to analogue composite output	A/D and D/A quantization: 10-bit / sample Bandwidth: 0 to 5.75 MHz +0.5/-2.0 dB S/N ratio: 56 dB or more, Differential gain: 2% or less, Differential phase: 2° or less Y/C delay: 20 ns or less, K-factor (2T pulse): 1% or less	

	DVW-M2000P	DVW-2000P
DIGITAL AUDIO PERFORMANCE		
Sampling frequency	48 kHz (synchronised with video)	
Quantization — Digital BETACAM	20-bit / sample	
Analogue input to analogue output	Frequency response (0 dB at 1kHz): 20 Hz to 20 kHz +0.5/-1.0 dB Dynamic range (at 1 kHz, emphasis ON): More than 95 dB Distortion (at 1 kHz, emphasis ON, reference level): Less than 0.05% Cross talk (at 1 kHz, between any two channels): Less than -80 dB Wow & flutter: Below measurable level	
Head room	20 dB (18 dB selectable)	
Emphasis (ON/OFF selectable in REC mode)	T1=50 µs, T2=15 µs	

	DVW-M2000P	DVW-2000P
SUPPLIED ACCESSORIES		
	PSW 4x16 Rack Mount Screw (x4), Operation manual (x1), Installation manual (x1)	

* ISR: Interactive Status Reporting

Portable VTR & Compact Players

DVW-250P

GENERAL

Power requirements	DC 12V +5/-1V
Power consumption	Approx. 26 W (REC. Mode, CONFI. Off)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	25% than 80% (relative humidity)
Weight	Approx. 6.6 kg (14 lb 9 oz)
Operating weight	Approx. 7.7 kg (16 lb 16 oz) (including battery and cassette)
Recording format	Digital Betacam
Tape speed	96.7mm/sec.
Record/playback time	Max. 124 min (BCT-D124L), Max. 40 min (BCT-D40)
Fast forward/rewind time	420 s or less (BCT-D124L), 160 s or less (BCT-D40)
Fast forward/rewind speed	Max. 24 times (with colour picture)
Search speed	Max. 8 times (2/5/8 selectable) (with colour picture)
Servo lock time	0.5 s or less (from Pause Mode)
Load/unload time	4.5 s or less
Battery	BP-GL95
Recommended cassettes	BCT-D6/D12/D22/D32/D40, BCT-D34L/D64L/D94L/D124L

DIGITAL VIDEO PERFORMANCE

Sampling frequency	Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz
Quantization	10-bit / sample
Error correction	Reed-Solomon code
Error concealement	Adaptive three dimensional

DIGITAL INPUT TO ANALOGUE COMPONENT OUTPUT

(playback with standard playback machine)

Bandwidth	Y: 0 to 5.75 MHz +-0.5 dB, R-Y/B-Y: 0 to 2.75 MHz ± 0.5 dB
S/N ratio	62 dB or more
K-factor (2T pulse)	1% or less

ANALOGUE COMPONENT INPUT TO ANALOGUE COMPONENT OUTPUT

(playback with standard playback machine)

Input A/D quantization	10-bit / sample
Bandwidth	Y: 0 to 5.75 MHz +0.5/-0.7 dB, R-Y/B-Y: 0 to 2.75 MHz + 0.5/-0.7 dB
S/N ratio	60 dB or more
K-factor (2T pulse)	1% or less
LF non-linearity	2% or less

ANALOGUE COMPOSITE INPUT TO ANALOGUE COMPOSITE OUTPUT

Input A/D quantization	10-bit / sample
Bandwidth	0 to 5.5 MHz ± 0.7 dB
S/N ratio	56 dB or more
Differential gain	2% or less
Differential phase	2° or less
Y/C delay	15 ns or less
K-factor (2T pulse)	1% or less

DIGITAL AUDIO PERFORMANCE

(playback on standard playback machine with 20-bit D/A)

Sampling frequency	48 kHz (Synchronised with video)
Quantization	20-bit / sample
Input A/D quantization	20-bit / sample
Frequency response	20 Hz to 20 kHz ± 0.5 dB
Dynamic range	100 dB or more (at 1kHz, emphasis ON)
Distortion	0.03% or less (at 1 kHz, emphasis ON)
Cross talk	-80 dB or less (at 1 kHz, reference level)
Wow & flutter	Below measurable level
Headroom	20 dB (or 18 dB selectable)
Emphasis	T1=50 µs, T2=15 µs (ON/OFF selectable)

INPUT/OUTPUT SIGNAL

SDI (Serial digital interface)	Serial digital component with embedded audio 4 channels, SMPTE-259M/ ITU-R BT.656
SDI input	BNC x 1
SDI output	BNC x 1

CAMERA

26-pin camera connector x 1	
Analogue component input	Y: 1.0 Vp-p, 75 Ω (sync negative) R-Y/B-Y: 0.7 Vp-p, 75Ω
SDI input	Serial digital component embedded audio 4 channels
Analogue audio input	-60 dBu/-20dBu/+4dBu, high impedance, balanced

VIDEO

Analogue composite input	BNC x 1, 1.0 Vp-p, 75 Ω
Analogue composite output	BNC x 2, 1.0 Vp-p, 75 Ω (x1: character ON/OFF selectable)

AUDIO

Analogue audio input	XLR x 4, -60 dBu/-20 dBu/-4 dBu, high impedance, balanced, +48 V power supply (ON/OFF selectable)
Analogue audio output	XLR x 4, +4 dBm (0dBm), low impedance, balanced
Headphones	Stereo standard jack, -17 dBu
Earphone	Stereo mini jack, -17 dBu

DVW-250P

TIME CODE

Time code input	BNC x 1, 0.5 V to 18 Vp-p, 10 kΩ
Time code output	BNC x 1, 1.2 Vp-p, 75 Ω, 2.2 Vp-p, 600 Ω

OTHERS

Remote	D-sub 9-pin, Sony 9-pin serial or ISR (RS-232C)
DC input	XLR 4-pin x 1 (for AC-550CE)
DC output	Mini 4-pin (for BVR-3)
RFU modulator interface	Video out/ Audio out/ DC out

PROCESSOR ADJUSTMENT RANGE

Video input and output level adjustable range	±3 dB
System sync phase	±2 µs

		J-30	J-30/SDI
GENERAL			
Power requirements		AC 100 V to 240 V, 50/60 Hz	AC 100 V to 240 V, 50/60 Hz
Power consumption		55 W	55 W
Operating temperature		+5 °C to +40 °C (+41 °F to + 104 °F)	+5 °C to +40 °C (+41 °F to + 104 °F)
Storage temperature		-20 °C to +60 °C (-4 °F to + 140 °F)	-20 °C to +60 °C (-4 °F to + 140 °F)
Humidity		25% to 80% (relative humidity)	25% to 80% (relative humidity)
Mass		8.2 kg (18 lb 1 oz)	8.2 kg (18 lb 1 oz)
Dimensions (W x H x D)		307 x 100 x 397 mm (12 ⅛ x 4 x 15 ¾ inches)	307 x 100 x 397 mm (12 ⅛ x 4 x 15 ¾ inches)
Tape speed	Digital Betacam	96.7 mm/s	96.7 mm/s
	MPEG IMX	64.467 mm/s (525 mode), 53.776 mm/s (625 mode)	64.467 mm/s (525 mode), 53.776 mm/s (625 mode)
	Betacam SX	59.515 mm (525 mode), 59.575 mm (626 mode)	59.515 mm (525 mode), 59.575 mm (626 mode)
	Betacam/ Betacam SP	118.6 mm/s (525 mode), 101.5 mm/s (625 mode)	118.6 mm/s (525 mode), 101.5 mm/s (625 mode)
Playback time	Digital Betacam	Max. 124 min. with BCT-D124L	Max. 124 min. with BCT-D124L
	MPEG IMX	Max. 184 min. (525 mode)/220 min. (625 mode) with BCT-184MXL	Max. 184 min. (525 mode)/220 min. (625 mode) with BCT-184MXL
	Betacam SX	Max. 194 min. with BCT-194SXLA	Max. 194 min. with BCT-194SXLA
	Betacam/ Betacam SP	Max. 90 min. (525 mode)/108 min. (625 mode) with BCT-90MLA	Max. 90 min. (525 mode)/108 min. (625 mode) with BCT-90MLA
Fast forward/ rewind time	Digital Betacam	Approx. 5 min. with BCT-D124L	Approx. 5 min. with BCT-D124L
	MPEG IMX	Approx. 5 min. with BCT-184MXL	Approx. 5 min. with BCT-184MXL
	Betacam SX	Approx. 5 min. with BCT-194SXLA	Approx. 5 min. with BCT-194SXLA
	Betacam/ Betacam SP	Approx. 5 min. with BCT-90MLA	Approx. 5 min. with BCT-90MLA
Search speed range	Digital Betacam	±20 times normal playback speed	±20 times normal playback speed
	MPEG IMX	±32 times normal playback speed	±32 times normal playback speed
	Betacam SX	±35 times normal playback speed	±35 times normal playback speed
	Betacam/ Betacam SP	±18 times (525 mode), ±20 times (625 mode) normal playback speed	±18 times (525 mode), ±20 times (625 mode) normal playback speed
Servo lock time		1.5 s or less (from standby on)	1.5 s or less (from standby on)
Load/unload time		9 s or less	9 s or less
INPUT SIGNAL			
Ext. sync		BNC (x 1), Frame lock	BNC (x 1), Frame lock
OUTPUT SIGNALS			
Analogue composite output		BNC (x 1), RCA Phono (x1), 1.0 Vp-p, 75 Ω	BNC (x 1), RCA Phono (x1), 1.0 Vp-p, 75 Ω
S-video output		Mini DIN 4-pin (x 1), Y: 1.0 Vp-p, C: 0.286 Vp-p burst, 75 Ω	Mini DIN 4-pin (x 1), Y: 1.0 Vp-p, C: 0.286 Vp-p burst, 75 Ω
Analogue component output		BNC (x 3), Y: 1.0 Vp-p, R-Y/B-Y: 0.7 Vp-p, 75 Ω	—
SDI output		—	BNC (x 2), SMPTE 259M, 270 Mb/s, 0.8 Vp-p, 75 Ω
i.LINK (DV output)		6-pin (x1), IEEE 1394	6-pin (x1), IEEE 1394
Time Code output		—	BNC(x1), 1.0Vp-p, 75 Ω, unbalanced
Monitor output L/R		RCA Phono (x 2): -10 dBu at 47K Ω load, unbalanced, XLR (male x 2): +4 dBm, 600 Ω load, low impedance, balanced	RCA Phono (x 2): -10 dBu at 47K Ω load, unbalanced, XLR (male x 2): +4 dBm, 600 Ω load, low impedance, balanced
Headphone output		JM-60 Stereo Phone Jack, -∞to -12 dBu at 8 Ω load, unbalanced	JM-60 Stereo Phone Jack, -∞to -12 dBu at 8 Ω load, unbalanced
REMOTE CONTROL			
RS-422A		D-sub 9-pin (female) (x 1), Sony 9-pin remote interface	D-sub 9-pin (female) (x 1), Sony 9-pin remote interface
RS-232C		D-sub 9-pin (male) (x 1)	D-sub 9-pin (male) (x 1)
Wireless		SIRCS	SIRCS
SUPPLIED ACCESSORIES			
		Operation manual (CD-ROM), Operation manual, vertical stand (x 2), Infra-red remote controller	Operation manual (CD-ROM), Operation manual, vertical stand (x 2), Infra-red remote controller

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